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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,046	10/24/2003	Chen Kwang-Tsan	MIDWAY-611 (4536*95)	1554

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EXAMINER
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HAMO, PATRICK

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/693,046

Applicant(s)

KWANG-TSAN, CHEN

Examiner

Patrick Hamo

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: On page 1, lines 10-12, the sentence beginning "However, almost all the conventional small compressor..." is grammatically incorrect. A suggested correction is "However, almost all conventional small compressors have a complicated structure and have a piston that may not be smoothly operated and provide an unstable air current".

On page 2, lines 2-3 and 6-7, there are fragment sentences that may be corrected by inserting the word "is" after "cover" in line 3 and after "valve sheet" in line 6.

On page 3, line 22, applicant refers to a "resilient valve" on the second end of the crank. After inspection of figure 2, this "valve" looks to be in fact a seal. Examiner recommends changing the term to "resilient seal".

Throughout the specification, applicant refers to "the close end" in reference to one end of the cylinder. The word "close", as in "near" is indefinite as it is not clear what the end is "close" to. For the purposes of examination, the Examiner assumes Applicant meant "closed", as in "not open". Examiner recommends changing the term to "closed" in each instance.

On page 4, line 12, the word "valve" is misspelled "calve".

Appropriate correction is required.

### ***Claim Objections***

2. Claims 1-5 are objected to because of the following informalities: the applicant refers to "the close end" in reference to one end of the cylinder on page 7, lines 14, 16 and 18 and page 8, lines 5, 17 and 22. The word "close", as in "near" is indefinite as it is not clear what the end is "close" to. For the purposes of examination, the Examiner assumes Applicant meant "closed", as in "not open". Examiner recommends changing the term to "closed" in each instance.

The word "stopper" on page 8, line 14, is misspelled as "stopped".

The "resilient valve" in claim 3 (page 8, line 11) seems to be in fact a seal. Examiner recommends changing the term to "resilient seal".

The word "being" is missing in claims 4 and 5 in the phrase "from being overly wiggled" on page 8, lines 15-16 and 21.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4 and 5 are rejected as indefinite due to the following: it is not clear what applicant means by the phrase "from overly wiggled" on page 8, lines 15-16 and 21. The Examiner determined through a search of the phrase that "wiggled" is not common phraseology in the pertinent art. For the purposes of examination, the Examiner will take that to mean the valves are restricted to a certain extent by a stopper.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 3, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rozek, US Patent Number 5,890,879, in view of Rozek, US Patent Number 5,213,025 and in further view of Jamieson, US Patent Number 5,016,669.

Rozek '879 discloses the invention substantially as claimed, including the following: a motor (13) having a shaft (14) longitudinally extending therefrom; the shaft mounting a connector (see figure 2, between reference characters 13 and 18) eccentrically mounted to the shaft (column 2, lines 20-21), the connector attaching to a wobble piston (19); a bracket (13) attached to the motor (column 2, lines 16-18) and having a recessed ledge (28) defined in it that can be interpreted as a through hole in the broadest reasonable interpretation of the term "through hole"; the recessed ledge supporting a cylinder (25) in which the piston operates (column 2, lines 23-24 and 29-31), the cylinder including inlet and outlet ports at its head (column 2, lines 23-25), which constitutes a closed end, and the wobble piston being inserted into the cylinder in an open end opposite the closed end; a cover (29) longitudinally mounted on the cylinder head with inlet and outlet fittings (column 2, lines 31-32) that extend through the cover to the valve head member (27); and a housing formed of housing halves (31 and 32) supporting the compressor assembly including the motor, of which either half may

Art Unit: 3746

constitute a base depending on the orientation of the compressor assembly, the compressor assembly being mounted to the housing halves in a manner that isolates noise and vibration of the compressor assembly from the housing (column 2, lines 39-41, column 3, lines 11-14) through at least two (column 2, lines 64-65) mounting members (35) that constitute absorbers in the context of noise and vibration reduction.

Rozek '879 does not explicitly disclose the structure of the valve head member (27) or the wobble piston (19), particularly a valve sheet including a first valve selectively closing the input passage when the second end of the crank is moved toward the cover and a second valve selectively closing the outlet in the closed end of the cylinder when the second end of the crank is moved away from the closed end of the cylinder, a first inclined stopper extending from the cylinder into the inlet, a second inclined stopper extending from the cover into the output passage, and the crank of the piston comprising a resilient valve longitudinally secured on the second end of the crank by a fastener.

However, Jamieson teaches a valve assembly comprising two flapper valves (30) disposed between parallel plates (14 and 16) for the control of fluid inlet and discharge (column 1, lines 4-6). The upper plate (14) has an inlet port (18) and the lower plate (16) has a discharge port (20), and both plates have voids (22) formed for the flow of fluid. On these voids are ramped surfaces (28) that restrict the movement of the valves. Jamieson teaches that this valve assembly can be used with a reciprocating piston (column 1, line 67 – column 2, line 11). Plate 16 may be set in a cylinder in confronting relationship to a piston, in which case the first flapper valve (30, to the right in figure 1),

Art Unit: 3746

bends down onto the ramp surface (28, to the right in figure 1) as the piston withdraws from the valve assembly, allowing fluid to flow into the cylinder. As the piston reverses direction and moves toward the valve assembly, the negative pressure will cause the second flapper valve (30, to the left in figure 1) to bend onto the second ramp surface (28, to the left in figure 1), opening port 20 and allowing fluid to be discharged out of the piston cylinder.

Furthermore, Rozek '879 discloses that the wobble piston as disclosed in US Patent Number 5,890,879 may be of the style and form disclosed in Rozek '025, in which Rozek '025 teaches a conical rod piston capable of withstanding non-axial stress and strain forces induced by reciprocation (column 1, lines 30-33), including a cup seal (74) at the distal end of the reciprocating piston.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Rozek '879's invention with that of Jamieson and Rozek '025 in order to control the fluid inlet and discharge and to increase the expected lifetime of the air compressor by introducing a piston capable of withstanding non-axial stress and strain forces induced by reciprocation.

### ***Conclusion***

7. Applicant is duly reminded that a complete response must satisfy the requirements of 37 C.F. R. 1.111, including: "The reply must present arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references. A general allegation that the claims

Art Unit: 3746

'define a patentable invention' without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section. Moreover, 'The prompt development of a clear Issue requires that the replies of the applicant meet the objections to and rejections of the claims.'" Applicant should also specifically point out the support for any amendments made to the disclosure. See MPEP 2163.06 II(A), MPEP 2163.06 and MPEP 714.02. The "disclosure" includes the claims, the specification and the drawings.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Hamo whose telephone number is 571-272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Application/Control Number: 10/693,046

Page 8

Art Unit: 3746

A stylized handwritten signature consisting of the letters 'P' and 'H' joined together.

PH

A handwritten signature in cursive script that reads 'Anthony Stashick'.

ANTHONY D. STASHICK  
PRIMARY EXAMINER